

various types of positive electrode materials and their performance characteristics were compared.

(EXAMPLE)

5       The first and second oxides were prepared in the same manner as in the above Experiment 1.

Also, a third oxide was prepared in the following manner. LiOH, cobalt nitrate ( $\text{Co}(\text{NO}_3)_2$ ) and magnesium nitrate ( $\text{Mg}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ ) were blended in the ratio by mole of Li to Co to Mg of 1:0.9:0.1. The blend was heat treated in 10 a dry air at 750 °C for 20 hours and then subjected to size reduction to obtain a lithium-cobalt complex oxide (third oxide) having a mean particle diameter of 10  $\mu\text{m}$  and represented by the formula  $\text{LiCo}_{0.9}\text{Mg}_{0.1}\text{O}_2$ .

15       The first, second and third oxides such obtained were then mixed in the ratio by weight of 1:0.5:0.5 to prepare a positive electrode material (positive active material).

Using this positive active material, a positive electrode was fabricated in the same manner as in the above Experiment 1.

20       The procedure of the above Experiment 1 was followed to fabricate a negative electrode and prepare a nonaqueous electrolyte solution.

By using such-obtained positive electrode, negative electrode and nonaqueous electrolyte solution, a battery D 25 in accordance with the present invention was constructed in

the same manner as in the above Experiment 1.

(COMPARATIVE EXAMPLE 6)

In the above Example, the lithium-manganese complex oxide (first oxide) and the lithium-cobalt complex oxide (third oxide) were mixed in the ratio by weight of 1:1 to provide a positive active material for use in the positive electrode. Otherwise, the procedure used to construct the battery D of the present invention was followed to construct a comparative battery Y1.

(COMPARATIVE EXAMPLE 7)

In the above Example, the lithium-manganese complex oxide (first oxide) was used alone to provide a positive active material for use in the positive electrode. Otherwise, the procedure used to construct the battery D of the present invention was followed to construct a comparative battery Y2.

(COMPARATIVE EXAMPLE 8)

In the above Example, a lithium-manganese complex oxide (spinel manganese) represented by  $\text{LiMn}_2\text{O}_4$  was used alone to provide a positive active material for use in the positive electrode. Otherwise, the procedure used to construct the battery D of the present invention was followed to construct a comparative battery Y3.

(COMPARATIVE EXAMPLE 9)

In the above Example, the lithium-nickel-cobalt complex

oxide (second oxide) was used alone to provide a positive active material for use in the positive electrode.

Otherwise, the procedure used to construct the battery D of the present invention was followed to construct a comparative battery Y4.

5 (COMPARATIVE EXAMPLE 10)

In the above Example, the lithium-cobalt complex oxide (third oxide) was used alone to provide a positive active material for use in the positive electrode. Otherwise, the procedure used to construct the battery D of the present invention was followed to construct a comparative battery Y5.

(COMPARATIVE EXAMPLE 11)

In the above Example, the lithium-manganese complex oxide (spinel manganese) represented by  $\text{LiMn}_2\text{O}_4$  was used for the first oxide, and this lithium-manganese complex oxide (first oxide) and the lithium-nickel-cobalt complex oxide (second oxide) were mixed in the ratio by weight of 1:1 to provide a positive active material for use in the positive electrode. Otherwise, the procedure used to construct the battery D of the present invention was followed to construct a comparative battery Y6.

(COMPARATIVE EXAMPLE 12)

In the above Example, the lithium-nickel-cobalt complex oxide represented by  $\text{LiNi}_{0.8}\text{Co}_{0.2}\text{O}_2$  was used for the second